UNIQUEST

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

AVAILABLE TECHNOLOGY

BenPol – targeted crop protection from chewing insects

Benefits

- High specificity to targeted chewing pests including Earworm
- No known negative impacts on the environment or beneficial fauna
- Protects dsRNA payloads from environmental degradation.

Background

The annual cost of insect pest related damage in agriculture was USD 25B globally in 2014. This increases each year and herein lies the driver behind the need for using insecticides.

Widespread insecticide use has led to increased resistance developed by pests leading to proliferation of major pests, increased crop losses, subsequent increased insecticide use and a greater risk to humans and ecosystems. This means there is a need to develop innovations such as exogenous crop protectants that are effective and environmentally friendly.

The Technology

BenPol is a BENtonite POLymer formulation that when loaded with dsRNA payloads demonstrates the following product benefits:

- **Kills targeted chewing pests** – pH-dependant release profile ensures that payload survives past pest midgut to have a gene-knockdown effect, killing the pest
- **Application** – easily sprayed onto crop leaf surface
- **Environmental stability** – persists on leaf surface for >20days and provides sustained payload protection from nuclease degradation, UV light and acidic pH
- **Transport and storage** – protects payload from heat over extended periods of time

The project has been led by world leading agri-nanotechnologists and proof of concept data (TRL3) illustrating effective kill rates has been demonstrated in *Helicoverpa armigera* (Earworm).

Technology Development & Commercialisation Options

UniQuest is seeking a commercialisation partner to further develop and commercialise the technology. Funds would be utilised to expand on lead and secondary product candidate data in chewing pests of economic importance. The commercialisation partner may be an existing company looking to license rights to innovative crop protectants and to enter into a research collaboration.

IP Position

The technology is the subject of a patent filed across multiple jurisdictions including the US (US 10405539) with a priority date of 19 June 2015.

Research leaders

Professor Neena Mitter is a Group Leader with more than 20 years experience in molecular biology and biotechnology in agri- and hotriculture, has >70 peer-reviewed publications and is an inventor on 5 patent families.

Professor Zhi Ping (Gordon) Xu is a Group Leader with expert knowledge in nanomaterial develop-ment for both agricultural and human health applications. He has more than 150 peer-reviewed publications and is an inventor on 4 patent families.

About UniQuest

UniQuest is Australia's leading technology transfer company and manages the intellectual property of The University of Queensland (UQ). Established in 1984, our innovation portfolio has seen the creation of more than 100 startup companies, and includes Australia's first blockbuster vaccine Gardasil®, the internationally acclaimed Triple P-Positive Parenting Program and superconductor technology used in most of the world's MRI machines. In 2015, our spinout company Spinifex Pharmaceuticals secured Australia's largest ever biotechnology acquisition.

Contact

Dr Deon Goosen
Director, Commercialisation - Life Sciences (Agriculture and Food Sciences)
UniQuest Pty Limited
P: +61 (0) 407 733 619
E: d.goosen@uniquest.com.au